In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Claim 1. (Cancelled)

2. (Currently Amended) ~~The~~ A method ~~according to Claim 1, wherein~~ of operating a digital system having a processor and associated translation lookaside buffer (TLB), comprising the steps of:

executing a plurality of program tasks within the processor;

initiating a plurality of memory access requests in response to the plurality of program tasks;

caching a plurality of translated memory addresses in the TLB responsive to the plurality of memory access requests;

incorporating a task identification value with each translated memory address to indicate which of the plurality of program tasks requested the respective translated memory address;

incorporating a shared indicator with each translated memory address to indicate when a translated memory address is shared by more than one of the plurality of program tasks;

invalidating a portion of the plurality of translated memory address in the TLB in a manner that is qualified by the shared indicator in response to an invalidate TLB entry command issued from the processor;

said invalidate TLB entry command comprises an invalidate shared TLB entry command; and

the step of invalidating in response to an invalidate shared TLB entry command comprises invalidating a translated memory address in the TLB only if the corresponding shared indicator indicates the translated memory address is shared by more than one of the plurality of program tasks.

3. (Currently Amended) ~~The~~ A method ~~according to Claim 1, wherein~~ of operating a digital system having a processor and associated translation lookaside buffer (TLB), comprising the steps of:

executing a plurality of program tasks within the processor;

initiating a plurality of memory access requests in response to the plurality of program tasks;

caching a plurality of translated memory addresses in the TLB responsive to the plurality of memory access requests;

incorporating a task identification value with each translated memory address to indicate which of the plurality of program tasks requested the respective translated memory address;

incorporating a shared indicator with each translated memory address to indicate when a translated memory address is shared by more than one of the plurality of program tasks;

invalidating a portion of the plurality of translated memory address in the TLB in a manner that is qualified by the shared indicator in response to an invalidate TLB entry command issued from the processor;

said invalidate TLB entry command comprises an invalidate task TLB entry except shared command, said invalidate task TLB entry except shared command identifying one of the plurality of program tasks; and

the step of invalidating in response to an invalidate task TLB except shared command comprises invalidating a translated memory address in the TLB only if the corresponding task identification value indicates the program task identified by said invalidate task TLB entry except shared command and the corresponding shared indicator indicates the translated memory address is not shared by more than one of the plurality of program tasks.

Claims 4 to 16. (Canceled)

17. (Currently Amended) ~~The~~ A digital system ~~of Claim 14, wherein~~ having a translation lookaside buffer (TLB), the TLB comprising:

storage circuitry with a plurality of entry locations for holding translated values, wherein each of the plurality of entry locations includes a first field for a translated value and a second field for an associated shared indicator;

a set of inputs for receiving a translation request;

a set of outputs for providing a translated value selected from the plurality of entry locations;

control circuitry connected to the storage circuitry, wherein the control circuitry is responsive to an invalidate TLB entry command to invalidate entries within said storage circuitry qualified by the shared indicator field;

said invalidate TLB entry command comprises an invalidate shared TLB entry command; and

said control circuitry being responsive to an invalidate shared TLB entry command comprises to invalidate a translated memory address in the storage circuitry only if the corresponding shared indicator indicates the translated memory address is shared by more than one of the plurality of program tasks.

18. (Currently Amended) ~~The~~ A digital system ~~of Claim 14, wherein~~ having a translation lookaside buffer (TLB), the TLB comprising:

storage circuitry with a plurality of entry locations for holding translated values, wherein each of the plurality of entry locations includes a first field for a translated value and a second field for an associated shared indicator;

a set of inputs for receiving a translation request;

a set of outputs for providing a translated value selected from the plurality of entry locations;

control circuitry connected to the storage circuitry, wherein the control circuitry is responsive to an invalidate TLB entry command to invalidate entries within said storage circuitry qualified by the shared indicator field;

said storage circuitry wherein each of the plurality of entry locations includes a third field for a task identification value;

said invalidate TLB entry command comprises an invalidate task TLB entry except shared command, said invalidate task TLB entry except shared command identifying one of a plurality of task identification values; and

control circuitry being responsive to an invalidate task TLB except shared command to invalidate a translated memory address in the storage circuitry only if the corresponding task identification value corresponds to said task identification value of said invalidate task TLB entry except shared command and the corresponding shared indicator indicates the translated memory address is not shared.